PATENT ABSTRACTS OF JAPAN

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(54) KARAOKE DEVICE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a KARAOKE device which can refer to its past music selection information.
SOLUTION: This device 1 select desired music out of a main storage part 9 stored with many pieces of music information in digital code and text information regarding their music and reproduces the selected music information. Then the KARAOKE device is equipped with a medium read/write part 21 which reads and writes a portable storage medium 20 stored with part or all of text information regarding music selected in the pastan arithmetic processing part 22 which performs a specific process for information inputted from this medium read/write part 21and a music name display part 23 which displays the process result of the arithmetic process part 22 together with the music name. Consequentlythe information inputted from the portable storage medium 20 is processed as specified and the result is displayed at the music name display part 23.

CLAIMS

[Claim(s)]
[Claim 1]A karaoke device which chooses a desired musical piece from a main memory part which memorizes text information about musical piece information and this musical piece of a large number characterized by comprising the following by which digital coding was carried outand reproduces selected musical piece information.
A medium read/write part which write to a portable storage which memorized a part or all of text information about a musical piece selected in the past.
An arithmetic processing section which performs predetermined processing to information inputted from this medium read/write part.

A musical piece name indicator which displays a processing result in this arithmetic processing section with a musical piece name.

[Claim 2]The karaoke device according to claim 1 having a display musical piece input part for selecting a song with reference to display information of said musical piece name indicator.
[Claim 3]The 1st mode in which said arithmetic processing section arranges a musical piece name in order with a new selection dayThe 2nd mode in which a musical piece name is arranged in order with much selection frequencyand the 3rd mode in which a musical piece name is arranged in order with much frequency of a singer name corresponding to a selected musical pieceThe karaoke device according to claim 1 or 2wherein it has at least one mode among the 4th mode in which a musical piece name is arranged in order with much frequency of a genre corresponding to a selected musical piece and said display musical piece input part has a mode switching part for changing said each mode.
[Claim 4]The karaoke device according to claim 1 to 3 constituting said medium read/write part so that a part or alland a selection day of text information about a selected musical piece may be written in said portable storagewhen a musical piece is chosen.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to the karaoke device which a karaoke device is startedespecially can refer to the past song selection information on self.
[0002]
[Description of the Prior Art]Generallyin the karaoke device installed in a restauranta homeetc.the accompaniment music information on the musical piece for which it asksbackground video informationand lyrics-characters information are beforehand memorized by storagessuch as a laser disc. And when a song is selected in the musical piece for which a user asks and there is a back chorus. A back chorus piles up according to a reproduction accompaniment soundand lyrics characters are displayed on this image at the same time a background video copies outand what was made as [change / so that it may be easy to sing a user / the color of lyrics characters / according to accompaniment] is known widely. About the musical piece except the laser disc memorizingif it is in such a karaoke deviceif it cannot use and not only a musical piece with high use frequency but a musical piece with low use frequency is all arrangedthe expense accompanying it will also become huge and is not realistic.
[0003]Even if it is for a new song to appear and sing the music by accompaniment of a karaoke deviceit cannot sing until the new song is cut as a laser disc for

karaoke performance devices and marketedbut by the time it can useit must wait several months. A communication karaoke device came [then] to be developed as a means for solving these problems at a stretch recently. As for this communication karaoke devicean information center has as a database the information about the musical piece of the various sorts as which a put on the market on the market musical piece is announced one by one from the firstThe thing selected from now on is distributed to each user via a telephone line if neededand a user chooses and uses out of this distributed musical piece. The storage in which volatile device and user of capacity who distributed the information about the musical piece which selected the song to it from the center side whenever the user selected the song in this communication karaoke device are bigFor exampleit has the hard diskthe information about a frequently-used musical piece is accumulated in thisand there is an accumulated type device which chooses a desired musical piece from this accumulation dataand was used. A this accumulation type device is in the tendency used widely from there being little expense of a communication line as compared with a volatile deviceand ending.
[0004]When the capacity factor of telephone linessuch as nightis lowthe data of the storage of this accumulation molding equipment is updated every day or if neededand can be distributed at an early stage. by the wayperformancessuch as tone qualityare boiling electrohonessuch as a synthesizer and an electric pianomarkedly by technical progressand they are improving.
The information which drives this is transmitted in conformity with the signal by which digital coding was carried outfor examplethe MIDI (Musical Instrument Digital Interface) standard specified to transfer of music information.
HereMIDI connects with the sound source of musical instrumentssuch as a synthesizer and an electric pianoetc.and means the standard of the hardware defined that exchange of information should be made possibleand software.
[0005]By using this MIDI standardit became possible to transmit an electrohone control signal efficiently. Other information which does not belong to this MIDI standardfor examplelyrics-characters informationand still picture information are transmitted by the signal by the reversible arithmetic compressing methodA PCM (Pulse Code Modulation) signal and the audio signal of MPEG (Moving Picture Image Cording Experts Group) chorus information with the signal by which formatting was carried out with the coding method. It will be transmitted. The information accumulated to the memory storage of the karaoke device is read and reproduced according to a user's song selectionand he will singa user referring to the lyrics characters displayed on the display according to the accompaniment music reproduced.
[0006]
[Problem(s) to be Solved by the Invention]By the wayif it was in the conventional karaoke device which was mentioned abovewhen a user selected a songthe musical piece name which a user wants to open the thick musical composition number magazine which carries the article in which a huge number of musical composition numbers appear each timeand to sing had to be discoveredthe

musical composition number had to be inputtedand it was quite complicated. Since the repertory which an individual sings is restrictedit is generally in the tendency to repeat the musical piece sung to the past and to select a song. Thereforethe musical piece which the individual sang in the past can be recognized easilyand the actual condition is that the operativity of a karaoke device will improve dramatically if it can choose easilybut such a device is not yet developed. paying attention to the above problemsthat this should be solved effectivelyit is originated and this invention comes out. The purpose is to provide the karaoke device which can refer to the song selection information on self.

[0007]
[Means for Solving the Problem]In a karaoke device which chooses a desired musical piece from a main memory part which memorizes text information about musical piece information and this musical piece of a large number by which digital coding was carried out in order to solve the above-mentioned problemand reproduces selected musical piece informationA medium read/write part which write to a portable storage which memorized a part or all of text information about a musical piece selected in the pastIt constitutes so that information inputted from this medium read/write part may be equipped with an arithmetic processing section which performs predetermined processingand a musical piece name indicator which displays a processing result in this arithmetic processing section with a musical piece name.
[0008]In using a karaoke device by constituting in this waya user reads a memory content of a portable storage of self by a medium read/write part firstand displays these contents on a musical piece name indicator via an arithmetic processing section. A musical piece name and a musical composition numbera singer nameconsecutive numbersselection frequencyetc. which a user chose in the past are displayed on this indicatorand a user chooses by inputting a musical composition number with reference to this display information. In this caseif it enables it to select a song by providing a different display musical piece input part for exclusive use from the usual input meansand inputting consecutive numbersit will become possible to perform song selection operation simpler as compared with a case where a musical composition number which usually consists of a 5-8-digit number or the alphabet is inputted.
[0009]The above-mentioned arithmetic processing section has the 1st - two or more 4th compute modesFor examplein the 1st modea selection day arranges a musical piece name in new orderarranges a musical piece name in order with much selection frequency in the 2nd modeand it in the 3rd mode. A musical piece name is arranged in order with much frequency of a singer name corresponding to a selected musical pieceand in the 4th modeit calculates so that a musical piece name may be arranged in order with much frequency of a genre corresponding to a selected musical piece. And a display musical piece input part has a mode switching partand can perform [this change operation] now a change display in each above-mentioned mode. When reproduction of a musical piece selected at

the time [a musical piece] which song selection ended is completedthe selected a part or all of text information of a musical piece is written in the above-mentioned portable storage with a selection dayand have at the time of the next song selection.

[0010]

[Embodiment of the Invention]Belowone example of the karaoke device concerning this invention is explained in full detail based on an accompanying drawing. The block lineblock diagram showing the karaoke device of this invention with which drawing 1 suited the MIDI standardThe block lineblock diagram in which drawing 2 mainly shows a reproduction meansthe lineblock diagram in which drawing 3 shows an example of a display musical piece input partThe figure in which drawing 4 shows an example of the storage format of a portable storagethe figure showing an example of the contents of a table after an operation [in / in drawing 5 / the 1st mode]The figure showing an example of the contents of a table after an operation [in / in drawing 6 / the 2nd mode]the figure showing an example of the contents of a table after an operation [in / in drawing 7 / the 3rd mode]and drawing 8 are the figures showing an example of the contents of a table after the operation in the 4th mode.

[0011]Firstbased on drawing 1the entire configuration of a communication type karaoke device is explained. The information center 2 which provides the information needed with the accumulated type karaoke device 1In adding the accompaniment music information (MIDI information) about many musical pieceslyrics-characters informationand a chorusit has the mass storage 3 which accumulated the text information about chorus information (the above is named generically and musical piece information is called) and a musical piecestill picture informationetc.and each musical piece is put in a database. Digital coding is carried out and each above information can perform transmission and processing now easily. The above-mentioned accompaniment music information is information for driving electrohoneand digital coding is carried outand formatting of it is carried out by what is called MIDI standardand it calls this MIDI information.

[0012]The center control section 4 manages operation of this whole information center 2and this database is distributed from the interface 5 to the predetermined karaoke device 1 via the public telephone line 6 if needed. The information center 2 shows one of them in the example of a graphic display under management of two or more music reproduction devices. The distributed information is incorporated into a device via the interface 7 by the side of the karaoke device 1 from the information center 2. The control means 8 consists of microcomputers etc.for examplecontrols operation of this whole music reproduction deviceand also performs the operation of the arrangement about the musical piece name in each mode mentioned later.

[0013]The information about the musical piece of a large number to which the main memory part 9 was distributed from the information center 2That isit is a storage for memorizing MIDI informationlyrics-characters informationchorus informationtext informationstill picture informationetc.and is constituted from

memorizing a lot of data by a cheap storage with a big storage capacityfor examplea hard disk etc. The moving-image-information accumulating part 10 consists of many laser discs etc.for examplemany animations are beforehand memorized in thisand each animation is read if needed corresponding to ****such as enkaa forkand pop. A user selects a song or the input means 11 which consists of a keyboard and a remote control unit inputs the information which sets up the tempo (speed) of music.

[0014]The MIDI information which has read the reproduction means 12 from the main memory part 9 via the control means 8 based on the song selection information from the input means 11After the accompaniment music and the chorus which reproduce chorus informationlyrics-characters informationetc. and were reproduced are mixed by the mixer part 14they will be further mixed with the amplifier 19 with the singing voice inputted from the microphone 13and they will be outputted as a sound by the loudspeaker 15. Simultaneously with reproduction of the musical piece which selected the songthe moving image information selected according to the **** is read from the moving-image-information accumulating part 10 via the control means 8Displaying this on the display 16the lyrics-characters information reproduced by the above-mentioned reproduction means 12 is superimposedthis is piled upand it displays.

[0015]To the control means 8 of this karaoke device 1. For exampleread information in the portable storage 20 useful for the cellular phone which consists of an IC card or a floppy diskorOr the medium read/write part 21 which writes information in this is connectedand this control means 8 has the arithmetic processing section 22 which processes the information read in the above-mentioned storage 20 by a predetermined program. The musical piece name indicator 23 which displays the result of an operation in the above-mentioned arithmetic processing section 22 is connected to the above-mentioned reproduction means 12and a musical composition numbera serial number (consecutive numbers)a genreselection frequencyetc. can be selectively displayed now on it with a musical piece name. The function of this musical piece name indicator 23 is given to the above-mentioned display 16and it may be made to make this display 16 use also [indicator / 23 / musical piece]. The display musical piece input part 24 is formedand the information about song selection can be inputted now into the above-mentioned control means 8 from thisreferring to the display information displayed on the above-mentioned musical piece indicator 23. It may be made for this display musical piece input part 24 to make it use also [input means / 11 / above-mentioned].

[0016]Nextbased on drawing 2the concrete composition which made the subject the reproduction means 12 in drawing 1 is explained. Firstthe reproduction means 12 has the bus 25 connected to the control means 8and DRAM(Dynamic Random Access Memory) 26 for reproduction is connected to this bus 25for example as a high-speed memory measure for access with early writing and read operation.

[0017]This DRAM26 for reproduction accumulates temporarily the information about the selected musical piece read from the main memory means 9 except for

still picture informationorUse it as workspace of the arithmetic processing section 22 of this inventionand to this inside. [therefore] The musical piece arrangement area 30 grade of the lyrics-characters area 27 which memorizes lyrics-characters informationthe MIDI area 28 which memorizes MIDI informationthe chorus area 29 which memorizes chorus informationand musical piece arrangement operating is secured.

[0018]The main font storage parts store 31 is a medium which memorizes the font information of a main language fixedfor exampleit consists of ROMsand font information is beforehand memorized in this. And the font information corresponding to the lyrics characters which should be displayed will be pulled out. As font information memorized herethe font information about English with few charactersFrenchthe Korean alphabetetc. is memorized not to mention frequently-used Japanese.

[0019]The font expansion section 32 develops the information pulled out from the previous main font storage parts store 31changes it into dot informationand is constituted by OFG (Outline Font Generator). The lyrics-characters video signal formation part 33 is a portion which forms a actual video signal based on the dot information developed and formed by the above-mentioned font expansion section 32This video signal formation part 33 has lyrics-characters Video RAM 35 which remembers temporarily the video signal formed here to be VDP(Video Display Processor)34 for lyrics characters.

[0020]The still picture video signal formation part 36 is the video signal for still pictures a portion to formand this video signal formation part 36It has still picture Video RAM 38 which remembers temporarily the video signal formed here to be VDP(Video Display Processor)37 for still pictures which incorporates directly the still picture information read from said main memory part 9and forms a video signal. The switch part 40 is what chooses the video signal sent from the video signal sent from the above-mentioned lyrics-characters video signal formation part 33the video signal sent from the above-mentioned still picture video signal formation part 36or said moving-image-information accumulating part 10and superimposes and outputs itOn the display 16a still picture or an animationand lyrics characters will be piled up and displayed by this.

[0021]The MIDI reproduction means 41 has a sound source of a synthesizer etc.based on the MIDI information pulled out from the MIDI area 28one by oneit compounds an electronic soundis reproduced and forms accompaniment music. The chorus reproduction means 42 reproduces a chorus sound based on the chorus information pulled out from the chorus area 29. Chorus information is memorized in the previous chorus area 29where what was PCM-signal-izedfor example is compressed using the information-compression techniquessuch as MPEGand it is elongateddecrypted and reproduced by this chorus reproduction means 42. And the audio signal reproduced by this MIDI reproduction means 41 and the chorus reproduction means 42It is mixed by the mixer part 14and this mix signal is further mixed and amplified with the audio signal and the amplifier 19 from the microphone 13and is reproduced as a sound from the loudspeaker 15.

[0022]The key controller (not shown) is also included out of the ten key group 43 which inputs into the above-mentioned input means 11 the musical composition number etc. which were coded. The arithmetic processing section 22 processes the song selection hysteresis information of the past memorized by the portable storage 20 according to a predetermined programand is preparing the four modes here according to a processing method. The 1st mode is the mode in which a musical piece name is arranged in order with a new selection dayand this is the same as an order of the musical piece name memorized by the portable storage 20. The 2nd mode is the mode in which a musical piece name is arrangedand performs sorting application in order with much selection frequency on the basis of selection frequency. The 3rd mode is the mode in which a musical piece name is arranged in order with much frequency of the singer name corresponding to the selected musical pieceand arranges in order with many selection frequency about the musical piece of the same singer name. The 4th mode is the mode in which a musical piece name is arranged in order with much frequency of the genre corresponding to the selected musical pieceand arranges in order with many selection frequency about the musical piece of the same genre.
[0023]In order that the above-mentioned display musical piece input part 24 may change each above-mentioned modeas it is shown also in drawing 3The mode switching part 44 which consists of a button group to which the number of "1"-"4" was assigned corresponding to the 1st to 4th mode is formedand it corresponds to the change of this mode switching part 44The table in the mode corresponding to the changed button can be displayed now on the above-mentioned musical piece indicator 23. This display musical piece input part 24 has the ten key group 46 for serial numbers which selects a song by inputting the serial number currently displayed on the scroll button 45 and the musical piece indicator 23 for scrolling the display information of the musical piece indicator 23 to a sliding direction. And the signal input which means the end of an input is assigned by the "#" button 46Afor exampleand a serial number input is ended by carrying out the depression of this. It may be made to validate the input of the musical composition number using the ten key group 43 in the input means 11 also in the time of this serial number input waiting state.
[0024]Nextoperation of this example constituted as mentioned above is explained. Firstwith reference to drawing 1 and drawing 2it explains general flowing of the time of reproduction. The information over each of the musical piece of a large number distributed if needed from the information center 2for examplethe MIDI information for accompaniment musiclyrics-characters informationchorus informationstill picture informationtext informationetc. are memorized by the main memory part 9 which consists of hard disks etc.
[0025]When the tempo where the user chose the musical piece using the ten key group 43 of the input means 11 and which suited itself is chosenthe control means 8A series of information for one music to the selected musical piece is read from the main memory part 9and it is transmitted to the memory measure for rapid access of the reproduction means 12i.e.the predetermined area of DRAM26 for

reproduction. The shifted JIS code etc. which are referred to at the time of deployment in the case of transmission of lyrics characters are given to discrete character information. About still picture informationtransfer direct is carried out not to DRAM26 for reproduction but to still picture Video RAM 38 of the still picture video signal formation part 36. To the MIDI information as accompaniment informationbesides the information about accompaniment musicTempo informationdisplay timing of lyrics characterselimination timingstart timing information on a chorusetc. over the music are includedand the information about the singer namethe musical piece namethe existence of a chorusand the genre which were coded is included in text information. The control means 8 forms the MIDI clock which makes the operation base of this whole device based on this tempo information. The speed of this MIDI clock is set as speed which is counted 24 timesfor example to the length of a quarter note.

[0026]Nextthe control means 8 reproduces the information memorized by DRAM26 for reproductionand from the lyrics-characters area 27Lyrics-characters information is readfont information is read from the main font storage parts store 31 based on the shifted JIS code etc. which were added to thisand it develops to dot information by the font expansion section 32 based on this information. Deployment to the dot information of this lyrics-characters information is repeatedly performed for every single character. The developed dot information is sent to the lyrics-characters video signal formation part 33is changed into the usual video signal hereand it is sent outbeing accumulated in lyrics-characters Video RAM 35.

[0027]the motion-video signal with which the lyrics-characters video signal sent out from the lyrics-characters video signal formation part 33 was reproduced by the moving-image-information accumulating part 10 -- or the still picture video signal and the switch part 40 which were reproduced from the still picture video signal formation part 36 will be overlappedand it will be displayed on the display 16. Forming a MIDI clock as mentioned above based on the MIDI information which could comesimultaneously was read from the MIDI area 28. The accompaniment music by electrohone is reproduced by the MIDI reproduction means 41and it restores to chorus information by the chorus reproduction means 42 based on the information from the chorus area 29.

[0028]It is mixed with the singing voice from the microphone 13and these accompaniment music and chorus sounds are outputted as a sound from the loudspeaker 15. By thishe will sing according to accompaniment musica user referring to the lyrics characters displayed on the lower part of the animation on the display 16or the still picture.

[0029]The above explains the operation at the time of the mode characterized [of this invention] also by drawing 3 thru/or drawing 8 with reference to the nextalthough it is explanation about the operation at the time of the normal mode. Firstas shown in drawing 4the song selection information on the user individual's past is memorizedand whenever it sings using a karaoke devicethe information about the musical piece is written in the portable storage 20 like an IC card at this.

the information about the selected musical piece may all also incorporate the text information of the musical piece memorized by the main memory part 9 -- carrying out -- the [or / the 1st -] -- it may be made to incorporate only required information selectively according to each mode of four the [the 1st -] -- the information about a musical piece namea singer namea musical composition numberand a genre is incorporated so that it can respond to each mode of four. Heresince the text information of the selected musical piece is only incorporatedthe information about the existence of a chorus unrelated directly [this invention]etc. are included. The musical piece concerned other than the information about such a musical piece combines the information which shows the day chosen and sungi.e.a selection dayand is memorized.

[0030]The user can choose the 1st - the 4th mode other than the normal mode mentioned above about the input method of song selectionand can choose the 1st - the 4th mode freely by pressing "1"-"4" of the mode switching button 44 of the display musical piece input part 24. Where either of the above-mentioned 1st - the 4th mode is chosenwhen a user loads the medium read/write part 21 with the portable storage 20the contents shown in drawing 4 are incorporated in a device. To this incorporated informationprocessing which followed each mode by the arithmetic processing section 22 of the control means 8 is performedand the musical piece arrangement area 30 of DRAM26 for reproduction is used as a storage required for processing at this time.

[0031]The contents of processing are expressed to the musical piece indicator 23 as a gestalt as carried out according to the 1st - the 4th mode as shown in drawing 5 thru/or drawing 8and shown in this drawing 5 thru/or drawing 8. In the case of the 1st modeas shown in drawing 5a musical piece is arranged on the basis of a selection daythe newest selection day is made into a head and each musical piece name is arranged. Herehaving chosen musical piece name" wind" as the newest selection day on January 101996 is shown. The serial number (consecutive numbers) is given to each music with this musical piece nameand song selection operation can be performed nowwithout inputting a musical composition number by inputting this serial number so that it may mention later.

[0032]Thereforealthough it is unnecessarysince the input of the musical composition number is also validated heredisplaying a musical composition number in this 1st mode also shows the information about a musical composition number collectively. When the song selection method by the input of a serial number is taken in converselyas a musical composition number is certainly displayedit is made to select a song using the ten key group 43 of the input means 11. Since the same musical piece name may be attached to different music about a singer namehe is trying to also display a singer name in referencein order to distinguish thisbut it may be made to delete the column of this singer name. The reason for writing a singer name and a musical composition number in addition collectively is the same also about the following the 2nd - 4th mode. In the case of the 2nd modeas shown in drawing 6a musical piece is arranged on the basis of selection frequency. That isby applying sorting to the information incorporated from the

portable storage 20the selection frequency of the same musical piece name is countedand it arranges to descending of this counted value. In the example of a graphic displaymusical piece name" **" is arranged at the head as value "13" with the largest selection frequency.

[0033]A musical piece is arranged on the basis of the frequency (selection frequency) of the singer name corresponding to the musical piece which in the case of the 3rd mode was chosen as shown in drawing 7. That isby applying sorting to the incorporated information on the basis of a singer namethe selection frequency of the same singer name is counted and it arranges in order of a singer with the large counted value. In the example of a graphic displaythe musical piece name corresponding to a singer name and it to order of [Tanimura] and [Kayama] --etc. are arranged. When two or more musical pieces exist about the same singer namethe 2nd sorting and arrangement same with having been shown in the mode are performedand it arranges in order of a musical piece with much selection frequency. Although the portable storage 20 does not memorizeit memorizes in a karaoke devicea selectable track name is continued and displayed according to each singerand it is good also as a list according to singer. Since the distribution day is contained in the text information about a musical piecethe newest musical piece (newly released piece of music) is automatically brought to the top of a displayand it may be made to notify a user. A musical piece is arranged on the basis of the frequency (selection frequency) of the genre corresponding to the musical piece which in the case of the 4th mode was chosen as shown in drawing 8. That isby applying sorting to the incorporated information on the basis of a genrethe selection frequency of the same genre is counted and it arranges in order of a genre with the large counted value. In the example of a graphic displaythe [popular song]the musical piece name corresponding to a genre and it to order of [fork] --etc. are arranged. When two or more musical pieces exist about **** and the same genrethe 2nd sorting and arrangement same with having been shown in the mode are performedand it arranges in order of a musical piece with large selection frequency.

[0034]The processing result in each above mode is displayed on the musical piece name indicator 23and the user should just select a song with reference to display information. Herethe serial number corresponding to the musical piece name for which it asks is inputted from the ten key group 46 for serial numbers of the display musical piece input part 24the "#" button 46A is pressed at the time of the end of an inputand the end of an input is shown. That as which the musical composition number corresponding to the inputted serial number was chosen by thisand the control means 8 will be recognizedandas for the followingthe same processing as the usual mode mentioned above will be performed.

[0035]Herethe display information of the musical piece name indicator 23 changes to the corresponding mode by changing the mode switching part 44. That isthe table shown in drawing 5 thru/or drawing 8 is selectively displayed according to the change of the mode switching part 44. What is necessary is just to scroll a display screen by operating the scroll button 45when it becomes abundant so that

display information in the one mode cannot display simultaneously. When the performance of the musical piece selected at the time [the musical piece] which song selection processing ended as mentioned above is completedall of the text information about the musical piece or a part of [required] information will be written in the portable storage 20. Thusa user is a case where song selection operation is performedand he can select a song easily to sing again the musical piece sung in the pastwithout opening the musical composition number magazine which carries the article which displayed the information about song selection of the self past.

[0036]Nexteach above operation is explained with reference to the flow chart shown in drawing 9. Firstthe portable storage 20for examplean IC cardis read by the medium read/write part 21 (S1)When it judges whether the 1st - the 4th mode of the display musical piece input part 24 are chosen as the song selection methodor the normal mode is chosen (S2) and the normal mode is chosenit stands by until a song selection number is inputted using the usual input means 11 (S3). And if a song selection number is inputtedthe control means 8 will read the musical piece information corresponding to this song selection number from the main memory part 9and will start this reproduction motion (S4).

[0037]and -- if reproduction operation is completed (S5) -- the text information of the musical piece concerned -- or the required information of them is written in a previous IC cardand it prepares for the next selection (S6). If it is judged that it returned to S2 and not the normal mode but the 1st mode was chosen here (S7)The operation control part 22 of the control means 8 arranges the information about the selected piece of the past incorporated from the IC card from the newest thing (S8)and displays this result on the musical piece indicator 23 (S9). It will be in a waiting state until song selection information is inputted here (S10)and if a song is selected when a user inputs a serial number using the ten key group 46 for serial numbers of the display musical piece input part 24 with reference to display informationbased on thisthe control means 8 will start reproduction operation. That iseach process of S4 [after this] - S6 is as having mentioned above.

[0038]It returns to S7and when it is judged that the 1st not the mode but 2nd mode were chosen here(S11) and the operation control part 22 arrange the information about the selected piece of the incorporated past in order with much frequency of a selected piece (S12)and display this result on the musical piece indicator 23 (S9). Each process of S9 [after this]S10 and S4 - S6 is as having mentioned above. When it is judged that it returned to S11 and the 2nd not the mode but 3rd mode were chosen here(YES of S13) and the operation control part 22The musical piece of a singer name with many selected pieces is arranged for the information about the selected piece of the incorporated past in order with much frequency (S14)and this result is displayed on the musical piece indicator 23 (S9). Each process of S9 [after this]S10 and S4 - S6 is as having mentioned above.

[0039]When it is judged that it returned to S13 and the 3rd not the mode but 4th

mode were chosen here(NO) and the operation control part 22Each process of (S9)S9 [after this]S10 and S4 - S6 is as having mentioned above. [which arranges the information about the selected piece of the incorporated past in order with much frequency of the musical piece of a genre with many selected pieces (S15)and displays this result on the musical piece indicator 23] Although this flow chart was made to perform data processing (sorting etc.) corresponding to each mode for every selection modeAll data processing in each mode is performed simultaneously [with incorporation of information] as mentioned aboveand it may be made to change and display only the display information in the musical piece indicator 23 for every change of the mode switching button 44.
[0040]Although it was made to select a song using the ten key group 46 for serial numbers of the display musical piece input part 24it may be made to input this from the input means 11 like before in the example mentioned above with reference to the musical composition number displayed on the musical piece name indicator 23without forming this display musical piece input part 24. furthermore -- the above-mentioned example -- the [the 1st -] -- preparing of [at least one] each of these modesalthough all the modes of four are prepared and it enabled it to change these selectively -- ****ing . When the above 1st - the one mode in the 4th mode other than the normal mode are preparedWhen the medium read/write part 21 is loaded with the portable storage 20it may be made to prescribe that a program changes from the normal mode to this invention mode automaticallyand may be made to provide a mode switching buttonas explained previously.
[0041]
[Effect of the Invention]As explained aboveaccording to the karaoke device of this inventionthe operation effect outstanding as follows can be demonstrated. Since predetermined processing is performed to the history of the song selection information on self memorized to the portable storage and it was made to display on a musical piece name indicatorthe user can perform song selection operation easily by referring to this display informationwithout opening a built-in musical composition number magazine which carries the article. By enabling it to select a song by inputting the serial number of the displayed musical piece name from a display musical piece input partdigit numberssuch as a number inputted at the time of song selectiondecreaseand song selection operation can be simplified further. by making selectable several modes in which processing modes differa display in the mode according to a user's liking is attainedand song selection operation can be boiled markedly and can be performed simple.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a block lineblock diagram showing the karaoke device of this invention which suited the MIDI standard.

[Drawing 2]It is a block lineblock diagram mainly showing a reproduction means.
[Drawing 3]It is a lineblock diagram showing an example of a display musical piece input part.
[Drawing 4]It is a figure showing an example of the storage format of a portable storage.
[Drawing 5]It is a figure showing an example of the contents of a table after the operation in the 1st mode.
[Drawing 6]It is a figure showing an example of the contents of a table after the operation in the 2nd mode.
[Drawing 7]It is a figure showing an example of the contents of a table after the operation in the 3rd mode.
[Drawing 8]It is a figure showing an example of the contents of a table after the operation in the 4th mode.
[Drawing 9]It is a flow chart which shows operation of the karaoke device of this invention.
[Description of Notations]
1 [-- Main memory part] -- A karaoke device2 -- An information center8 -- A control means9 11 [-- A medium read/write part 22 / -- An arithmetic processing section23 / -- A musical piece name indicator24 / -- A display musical piece input part26 / -- DRAM for reproduction30 / -- Musical piece arrangement area44 / -- A mode switching part46 / -- Ten key group for serial numbers.] -- An input means12 -- A reproduction means20 -- A portable storage21